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Before the
**FEDERAL COMMUNICATIONS COMMISSION**
Washington, DC 20554

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| In the Matter of | ) | |
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| Amendment of Part 90 | ) | |
| of the Commission's Rules | ) | PR Docket No. 93-61 |
| to Adopt Regulations | ) | |
| for Automatic Vehicle | ) | |
| Monitoring Systems | ) | |

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# OPPOSITION OF PINPOINT COMMUNICATIONS, INC. TO PETITIONS FOR RECONSIDERATION


**PINPOINT COMMUNICATIONS, INC.**

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May 24, 1995

No. of Copies rec'd 0+12
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**OPPOSITION OF PINPOINT COMMUNICATIONS, INC.**

Pinpoint Communications, Inc. ("Pinpoint"), by its attorneys, hereby submits this Opposition to petitions for reconsideration of the Report and Order (the "Order") in the above-captioned proceeding.[1]

## I. INTRODUCTION AND SUMMARY

Given the *Order's* attempted balancing of divergent interests in the 902-928 MHz band, the number of petitions seeking reconsideration of sundry aspects of the *Order* is not surprising. The only sensible way for the Commission to proceed in the face of this disjointed set of petitions is to re-emphasize its primary objective in this proceeding: the development of an LMS industry that efficiently serves American consumers.[2] This aim is fully consistent with the Congressional goal of creating an intelligent transportation system ("ITS") infrastructure by bringing the communications revolution to the management of

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[1] *Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems* in PR Docket No. 93-61, FCC 95-41 (rel. Feb. 6, 1995). The new rules and a summary of the *Order* were published at 60 Fed. Reg. 15248 (March 23, 1995).

[2] Indeed, the Commission stated in the *Order* that it "strongly support[s] and wish[es] to encourage the continued development and deployment of an LMS industry." *Id.* at ¶ 99.

mobile resources.[3] Its realization requires that LMS rules allow licensees to proceed confidently and expeditiously with the construction and operation of LMS systems that provide consumers a useful, reasonably interference-free service.

The record indicates that the development of such a service depends, first and foremost, on rules that limit the highly unpredictable -- but, beyond doubt, potentially damaging -- impact of unlicensed Part 15 operations on LMS systems. As all LMS petitioners point out, however, the *Order*, by essentially changing the priority of use in the 902-928 MHz band, irrationally and unlawfully elevates the status of Part 15 devices and casts a dark cloud over the future of LMS. Without the benefit of notice and comment or a reasoned explanation based on the record, the Order unlawfully rewrites Part 15 rules by creating an unrebuttable presumption of non-interference from devices to LMS and by requiring multilateration LMS licensees to test for "unacceptable levels of interference" to Part 15 devices.

Furthermore, there is strong record evidence on reconsideration that the presumption against harmful interference from Part 15 devices should be made rebuttable, limited to heights of 5 meters or less, and should incorporate a distance element relative to a base station. While the LMS industry concurs with Pinpoint that such modifications would greatly speed the development and deployment of LMS and intelligent transportation systems, Part

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[3] The *Order* appropriately found that the Commission's creation of rules for LMS by establishing a Transportation Infrastructure Radio Services category within its rules "clearly demonstrates this agency's commitment to the continued integration of radio-based technologies into the nation's transportation infrastructure and our commitment to the development and implementation of the nation's intelligent transportation systems of the future." *Id.* at ¶ 6.

15 petitioners predictably attempt to extend the presumption beyond all bounds of reasonableness and without regard to Congressional ITS and FCC LMS service goals.

Moreover, the record demonstrates that the requirement for MTA licensees to test for interference to Part 15 devices is unworkable and should be struck from the rules. As if to prove the near impossibility of Part 15 interests cooperating in such testing, the Part 15 industry asks the Commission to specify testing procedures that are absurd and, in any event, wholly inconsistent with the acceptance of interference conditions that attach to secondary Part 15 operations.

Beyond the need for the proper relationship between primary multilateration LMS systems and secondary Part 15 devices, the record confirms that the emission mask set forth in the *Order* must be replaced with a specification that multilateration LMS licensees can meet without needlessly and hopelessly degrading service. On reconsideration, multilateration LMS petitioners unanimously support the same alternative, which is consistent with comparable measures in other private land mobile bands and tailored to the unique operating parameters of LMS service.

Pinpoint concurs with the many petitioners who support restricting the use of the 902-928 MHz band principally to vehicle location service. MobileVision's call for the FCC to allow unrestricted communications including interconnected voice fails to account for the fact that other bands are available for such services. Allowing unrestricted communications would unacceptably increase the interference level in this band. Accordingly, Pinpoint urges the Commission to reject MobileVision's proposal and reaffirm the primacy of vehicular location and monitoring applications.

In addition, despite the self-serving protestations of SBMS and CellNet Data, it is plain that the Order's grandfathering provisions are an effective and carefully tailored means of ensuring that LMS technology is rapidly deployed and made available to the public by the firms qualified to do so. The record shows that grandfathering existing licensees also is appropriate as a matter of fairness to existing licensees given the regulatory uncertainty that has plagued LMS for a period of years. As Pinpoint commented in its petition, moreover, in order to foster equal competition among grandfathered and MTA licensees, the Commission should allow grandfathered licensees to build out their systems within the BTA in which they are licensed and to modify their systems in certain limited respects in the future. Concerns of spectrum warehousing raised by SBMS should be addressed by limiting grandfathered licensees to twenty-five BTAs, as Pinpoint requested in its Petition.

Finally, Pinpoint urges the Commission to reject as unsound SBMS's continued calls for a band plan based on 2 MHz building blocks. The band plan adopted by the FCC, while not ideally suited to Pinpoint's needs, obviously is the result of much compromise and attempted accommodation. (As Pinpoint proposed in its Petition, the FCC should establish an 8 MHz sub-band for those systems that can share.) SBMS has not demonstrated how its proposal would serve the public interest in promoting LMS by a range of competitive providers -- including small entrepreneurial firms like Pinpoint whose systems use larger blocks of spectrum in a spectrally efficient manner. The manifest difficulty of aggregating the required amount of 2 MHz blocks of spectrum through the auction process makes the deployment of a variety of systems less likely than the FCC plan.

In sum, the Commission should reject petitioners' calls for the Commission to, in essence, retreat from the goal of bringing the communications revolution to vehicle location

and monitoring. While the modest modifications of the rules set forth above are appropriate, and indeed necessary, if multilateration LMS is to thrive, the FCC should not countenance proposals designed largely to degrade or transform the service, or impede development of robust competition in the LMS marketplace in the near future.

## II. THE PETITIONS FOR RECONSIDERATION REVEAL THE FOLLY OF ELEVATING THE STATUS OF UNLICENSED DEVICES RELATIVE TO LICENSED RADIO STATIONS AND UNDERSCORE WHY MULTILATERATION LICENSEES MUST HAVE *GENUINE* PRIORITY OF USE IN THE BAND IN ORDER TO PROVIDE THE PUBLIC WITH A USEFUL SERVICE

As explained in Pinpoint's Petition, despite their nominal primary status relative to unlicensed devices, multilateration LMS systems will, in large part, be secondary because they must accept interference received from a large class of Part 15 devices and must demonstrate that they will not cause "unacceptable interference."[4] The petitioners demonstrate that the *Order's* elevation of Part 15 devices in the 902-928 MHz band relative to multilateration LMS systems is not supported by record evidence, contrary to existing Commission rules and procedural obligations. Further, this unprecedented action represents bad policy and even worse precedent. Given these infirmities, it is apparent that the Commission should revise the rules governing the relationship between multilateration LMS and Part 15 on reconsideration. Specifically, the multilateration LMS licensees join Pinpoint in urging the FCC to act consistently with its goal of developing LMS systems that provide useful service to the public. The petitions indicate that this objective may not be furthered unless: (1) the unrebuttable presumption of non-interference from Part 15 devices is made

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[4] Petition for Reconsideration of Pinpoint at 20-24 ("Pinpoint").

rebuttable and reworked in several key respects[5]; and (2) the requirement for MTA licensees to demonstrate that they will not cause "unacceptable levels" of interference to Part 15 devices is eliminated or appropriately and reasonably limited.

The outlandish proposals of the Part 15 industry for MTA licensee testing procedures only serve to confirm that the testing requirement will be unworkable in practice. Similarly, the Commission should reject the overwrought and unsubstantiated calls by Part 15 interests to extend Part 15's newfound protections to every and any conceivable situation. The simple fact is that the *Order's* expansive treatment of Part 15 devices may have already compromised the future development and deployment of multilateration LMS to the public. Accordingly, the FCC should scale back, consistent with the evidence submitted in this docket, the unprecedented and unjustified measures designed to protect Part 15.

### A. LMS Commenters Concur with Pinpoint That the *Order* Irrationally and in a Procedurally Defective Manner Purports to Reaffirm the Higher Allocation Status of LMS in the Band While in Fact Undermining the Established Hierarchy.

Nearly all of the multilateration LMS petitioners joined Pinpoint in objecting to the fact that Part 15, despite its nominal "secondary" status, is now largely primary to multilateration LMS systems.[6] These petitioners agree that the requirement in the new rules

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[5] Pinpoint opposes the Petition for Reconsideration of the American Radio Rely League in that it seeks to further elevate the status of secondary amateur radio systems vis-a-vis primary multilateration LMS systems. Petition for Reconsideration of the American Radio Relay League, Inc. at 4-9. For the same reasons applicable to Part 15 devices, amateur radio status should only receive benefit of a rebuttable presumption.

[6] *See* Petition for Reconsideration of Mobilevision, L.P. at 10-13 ("MobileVision"); Petition for Reconsideration of Southwestern Bell Mobile Systems,

(continued...)

for multilateration LMS systems to demonstrate that they do not cause "unacceptable interference" to Part 15 devices in conjunction with the unrebuttable presumption of non-interference from certain Part 15 devices in essence reverses the priority of use between multilateration LMS and Part 15 in the 902-928 MHz band.[7] This conclusion is inescapable given the clearly defined elements of the primary-secondary relationship: the secondary user must not cause harmful interference to the primary user and must accept interference received from the primary user.

The majority of multilateration LMS petitioners also noted that the new unrebuttable presumption means that, contrary to the existing Part 15 rules, a large class of Part 15 devices are now immune to complaints of interference to multilateration licensees.[8] Making matters worse, as Pinpoint observed, the height-power attenuation rule incorporated into the presumption has the irrational effect of allowing more powerful systems at 15 meters than at 5 meters to be insulated from interference complaints.[9]

Moreover, the record makes clear that the *Order's* unexpected rewriting of the priority of use of the 902-928 MHz band was undertaken without the benefit of notice and comment as required by the Administrative Procedures Act. SBMS joined Pinpoint in observing that the testing requirement and unrebuttable presumption fundamentally changes without any notice or opportunity for comment Part 15 of the Commission's rules, which

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[6](...continued)
Inc. at 7-9 ("SBMS"); Petition for Reconsideration of Uniplex Corporation at 7-8 ("Uniplex").

[7] *See, e.g.*, Uniplex at 7-8.

[8] *See, e.g.*, MobileVision at 11-13; *see also* 47 C.F.R. § 15.5(b).

[9] Pinpoint at 22.

provides that Part 15 devices must not cause harmful interference to and must accept interference from all other operations in the band.[10] Nor can the sweeping change to Part 15 be deemed a "logical outgrowth" of the *NPRM* within the meaning of *Aeronautical Radio v. FCC.*[11] As Pinpoint stated in its petition, the Commission cannot evade its procedural obligations by rewriting Part 15 indirectly through modification of Part 90.[12] Further, the fatal procedural defects of the new "Part 15 rules" cannot be rectified on reconsideration.[13]

Moreover, the Commission has failed adequately to justify the abrupt change in its rules regarding the hierarchy of use in the band. As the court held in *Greater Boston Television Corp. v. FCC,* "an agency changing its course must supply a reasoned analysis indicating that *prior policies and standards* are being deliberately changed, not casually ignored . . . ."[14] The unprecedented elevation of Part 15's status in this proceeding was accomplished by mere pronouncement and accompanied by no analysis. It is apparent that in departing from the long-standing practice throughout the entire radio spectrum -- including 902-928 MHz -- of making Part 15 devices secondary to all licensed services, the

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[10] *See* 47 C.F.R. § 15.5(b); SBMS at 7-8; *see also* MobileVision at 2.

[11] 928 F.2d 428, 446 (D.C. Cir. 1991); *see also Wagner Electric Corp. v. Volpe,* 466 F.2d 1013, 1019 (3rd Cir. 1972).

[12] Pinpoint at 22-23.

[13] *National Tour Brokers Ass'n v. U.S.*, 591 F.2d 896, 902 (6th Cir. 1978) ("It simply will not do to designate the final rule as notice and claim the proceeding started from there, because it obviously did not."); see also State of Ohio Dep't. of Human Services v. U.S. Dep't of Health, 862 F.2d 1228, 1236-37 (6th Cir. 1988); *Wagner,* 466 F.2d at 1020.

[14] 444 F.2d 841, 852 (D.C. Cir. 1970), *cert. denied,* 403 U.S. 923 (1971); *see* also *Motor Vehicle Mfrs. Assn. v. State Farm Mut.*, 463 U.S. 29, 57 (1983) (citing *Greater Boston*).

Commission has failed to follow this "[r]ule of law in the administrative process."[15] Accordingly, the new rules raising the priority of Part 15 violate both the procedural and substantive requirements of the APA and must be modified on reconsideration.

### B. If the Commission is to Achieve Its Objectives in This Proceeding, the Unrebuttable Presumption of Non-Interference from Part 15 Devices Should Be Repealed or Substantially Limited Based on Record Evidence.

There are compelling policy reasons why the rule that creates an unrebuttable presumption against "harmful interference" to multilateration systems from certain Part 15 devices should be repealed or, at a minimum, further limited and made rebuttable.[16] Without repeal or such modifications, the presumption pushes multilateration LMS licensees toward a truly untenable position. Indeed, as several LMS petitioners explained, under the current rule licensees will be precluded from seeking any redress if the noise level from proliferating Part 15 devices interferes with operation of an LMS system.[17] In order to maintain a high level of LMS service to the public in such a degraded environment, the licensee would have to invest additional capital to modify its system or relocate a base station. In contrast, the unlicensed Part 15 device that is the source of the interference -- which may serve only one person -- could simply change its frequency of operation or be relocated on the premises.[18] Worse still, Part 15 interests could effectively "greenmail" the

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[15] *Greater Boston*, 444 F.2d at 852.

[16] Beyond policy considerations, moreover, only such a regulatory structure would be consistent with Part 15's purported secondary status.

[17] *See, e.g.*, SBMS at 9; MobileVision at 10-13.

[18] *See* Uniplex at 7-8; MobileVision at 13.

LMS provider by operating their devices so as to intentionally, albeit incidentally, cause interference to an LMS system until paid to desist.[19] Clearly the equities, as well as the FCC's LMS service goals, demand that the Commission revisit this rule.

The likelihood of interference problems created by the presumption -- problems incapable of being resolved under the *Order* -- has the potential to envelop the emerging LMS industry in an unnecessary cloud of uncertainty. As Uniplex commented, such uncertainty will undermine the Commission's LMS and Intelligent Transportation System goals by hampering the industry's ability to attract the financing necessary to construct and expand capital intensive systems and the subscribers needed to support system operation.[20]

Further, as Pinpoint and MobileVision observed, the record provides no factual basis for the presumption.[21] Indeed, in the *Order*, the Commission itself acknowledged that it was unable to determine what constitutes harmful interference to multilateration systems.[22] Hence, there is no foundation for the conditions that Part 15 devices must meet to gain the benefit of the presumption. The plain truth is that Part 15 devices, whether indoors or outdoors and operating below 15 meters, will have the potential -- at least in some circumstances -- to cause harmful interference to LMS as that term is defined in Part 2 and 90 of the Rules.[23] For example, the Part 15 Coalition notes in its petition that an antenna

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[19] *See* Uniplex at 7.

[20] *Id.*

[21] Pinpoint at 21-22; MobileVision at 11.

[22] *Order* at ¶ 95 n.210.

[23] Pinpoint agrees with MobileVision (at 12) and Teletrac (at 8) that Part 15 video links, like field disturbance sensors, should be excluded from the benefit of any presumption.

operating 5 meters above ground on a mountain top 1000 feet above average terrain could well cause more interference than an antenna operating 50 feet above ground at average terrain.[24] Pinpoint concurs that simple "above ground" antenna height restrictions do not necessarily protect licensees against interference. Hence, it is irrational to afford Part 15 devices the benefit of an *unrebuttable* presumption of non-interference.

Moreover, the policy established by the presumption is unsound. Precisely as Pinpoint feared in its petition, Part 15 interests have wasted no time in promising to "carry forward" the unrebuttable presumption "into other similar proceedings affecting the use of spectrum by Part 15 devices."[25] The Commission must carefully tailor the presumption to avoid creating far-reaching and unintended precedent for other spectrum bands.

The simplest and most appropriate solution short of formal spectrum management is to, first, make the presumption of non-interference rebuttable and, second, limit the presumption to heights of 5 meters or less.[26] As SBMS has suggested, if actual interference to the LMS system is shown, the Part 15 device should be required to cease operations until the interference is eliminated.[27] Pinpoint believes these modifications would adequately protect both LMS systems and Part 15 interests and harmonize the new rules with long-standing Commission policy.

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[24] The Part 15 Coalition at 13.

[25] Petition for Reconsideration of CellNet Data Systems, Inc. at 4 ("CellNet Data").

[26] *See* Pinpoint at 22-23.

[27] SBMS at 9.

In addition, such a rule is fair to Part 15 and consistent with the industry's reasonable expectations. The unlicensed device industry has made equitable arguments in this proceeding based on claims that LMS is a new licensed service, separate and distinct from AVM as justification for its lesser status vis-a-vis Part 15. Part 15 attempts to dismiss the essential condition of non-interference on which expanded Part 15 operations were authorized in 1989 and 1990[28] as not applicable with respect to a new licensed service. There is no basis for this claim. This condition determined Part 15's priority in the band viz-a-vis licensed systems, whether existing or to be constructed in the future. In any event, multilateration LMS is in large part comparable to AVM service, as the primary purpose is to monitor the location of mobile vehicles and objects.[29] The services in which Pinpoint intends to engage, for example, fall squarely within the old definition of AVM.[30]

If the Commission nonetheless retains the unrebuttable presumption, it must address the potential for operators of Part 15 devices that meet the conditions for the presumption to

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[28] *See* Reply Comments of Pinpoint Communications, Inc. (dated Mar. 29, 1994), at 22-24 for discussion of the conditions placed on Part 15 use of the 902-928 MHz band.

[29] *See, e.g., Order* at ¶¶ 18-19.

[30] The Commission's rules define a multilateration LMS system as "a system that is designed to locate vehicles or other objects by measuring the difference of time of arrival, or difference in phase, of signals transmitted from a unit to a number of fixed points or from a number of fixed points to the unit to be located." 47 C.F.R. § 90.7 The rules make clear, moreover, that "LMS systems are authorized to transmit status and instructional messages, either voice or non-voice, so long as they are related to the location or monitoring functions of the system," *id.* at § 90.353(a)(2), and that "[m]ultilateration systems whose primary operations involve the provision of vehicle location services, may provide non-vehicular location services." *Id.* at 90.353(a)(7). Indeed, although the new rules expressly permit the location of individuals, several AVM systems were permitted to do the same through waivers.

engage in "greenmail" or other otherwise intentionally interfere with LMS systems.[31] In addition, Pinpoint concurs with Uniplex that an unrebuttable presumption must in fairness incorporate a distance variable into its antenna placement rules (including indoor antennas).[32] In any event, as Pinpoint explained in its Petition, any such presumption should be limited to heights of 5 meters or less, including those cases where Part 15 is the "final link" for entities eligible under Subparts B and C of Part 90.[33]

### C. The Part 15 Industry's Proposals for Testing Procedures by Which Multilateration Systems Are to Demonstrate That They Will Not Cause Interference to Unlicensed Devices Underscore That This Requirement Is Unsound as a Matter of Policy.

The overreaching proposals of Part 15 petitioners for interference testing procedures by MTA licensees,[34] while not surprising, confirm beyond all doubt that the testing

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[31] Uniplex at 7.

[32] *See id.* at 8.

[33] Pinpoint at 23. Pinpoint's Petition further provides that if the Commission nonetheless extends the presumption to antennas with heights of up to 15 meters, attenuation formula should be as follows: R = 90 log(h/5) dB, where R is the required reduction in dB of power from the maximum permitted, and h is the height in meters. *See id.* at 24. Finally, Pinpoint also requested that the Commission clarify the obligations under new Rule 90.361(c)(2)(ii) to reduce power when antenna gains exceed 6 dBi and Section 90.361(c)(2)(ii) to adjust transmitter power at heights above 5 meters are cumulative. *Id.*

[34] The new rules properly exclude grandfathered licensees from the testing requirement. 47 C.F.R. § 90.353(a)(4) ("*MTA multilateration licensees* will be conditioned upon the licensee's ability to demonstrate through actual field tests that their systems do not cause unacceptable levels of interference to Part 15 devices") (emphasis added). As a matter of law and equity, these existing licensees' authorizations cannot and should not retroactively be conditioned on non-interference to unlicensed devices. Again, any such requirement would establish a very dangerous precedent that will undermine sound spectrum management.

requirement will likely prove unworkable in practice and should therefore be deleted from the rules. In their petitions, the Part 15 interests seek almost total immunity from any level of interference -- a characteristically overreaching position that is entirely at odds with the acceptance-of-interference conditions placed on their operation in 1989 when Part 15 rules were revised to permit expanded operation in the 902-928 MHz band.[35] The petitions of the Part 15 Coalition (and others) and experience with uncooperative Part 15 parties concerning testing procedures suggest that mandatory interference testing would merely create an opportunity for Part 15 proponents to throw up road blocks to the construction and operation of LMS systems and the introduction of ITS benefits to the traveling public.

The Ad Hoc Gas Utilities Distribution Coalition, for example, argues that unacceptable interference would be present merely if there is a "noticeable effect" on Part 15 operations 1/2 mile from a multilateration base station assuming a *fully loaded* multilateration system operating at *peak* capacity.[36] As Pinpoint has explained earlier, the assumptions underlying such a testing requirement are not justified.[37] The net result under such an extreme definition of "unacceptable interference" would be to stymie the use of this band to serve ITS needs, contrary to Congress's intent and the Commission goal.

Moreover, it is arbitrary and capricious for the FCC to require licensed stations to demonstrate they will not cause unacceptable interference to unlicensed devices when the record demonstrates that the biggest potential source of interference to Part 15 devices will be

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[35] *See* Reply Comments of Pinpoint (dated March 29, 1994) at 23.

[36] Petition for Reconsideration of Ad Hoc Gas Distribution Utilities Coalition at 18-19.

[37] *Ex Parte* Letter from Louis H.M. Jandrell of Pinpoint Communications, Inc. (dated Jan. 25, 1994) at 5-7 ("Pinpoint Jan. 25 *Ex Parte*").

other Part 15 devices, which will have no obligation whatsoever to cease causing such interference.[38] Indeed, the *Order* irrationally places no burden whatsoever on Part 15 devices to cooperate in resolving interference situations.

In any event, if the Commission retains the requirement for multilateration licensees to demonstrate they will not cause unacceptable interference, the duty to test should be finally discharged once the Commission approves a licensee's demonstration. Petitioner CellNet Data suggests that Part 15 interests should be able to seek FCC redress in cases of actual interference after the Commission has approved an LMS licensee's testing.[39] This request is tantamount to giving Part 15 primary allocation status in the band and should be dismissed for the reasons discussed above. Moreover, to allow secondary Part 15 devices to forevermore hamstring licensees with accusations of interference would significantly lessen the utility of LMS to consumers.

### D. Contrary to the Claims of Part 15 Petitioners, the Commission's New Rules Impose No New Height or Power Limits on the Operation of Part 15 Devices

The petitions for reconsideration of Part 15 proponents are replete with specious claims that the new rules prevent use of outdoor, unlicensed transmitters at heights in excess of 15 meters.[40] Contrary to these hysterical cries, unlicensed transmitters may still be

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[38] *See, e.g., Ex Parte* Filing of Pinpoint Communications, Inc. (filed Sept. 15, 1994) at 15-22 ("Pinpoint Sept., 15, 1994 *Ex Parte*") *Interference Analysis of Part 15 Devices and LMS Systems -- Initial Calculations, Annex 2,* Further Comments of MobileVision (dated March 15, 1994).

[39] *See* CellNet Data at 8.

[40] *See, e.g.*, Petition for Reconsideration of UTC at 13.

deployed *at any height* consistent with their well-understood and long-standing non-interference obligations and secondary status. Further, the power limits of Sections 15.245-249 of the Commission's Rules for operations in the 902-928 MHz band have not been changed.

Based on these unfounded claims, Metricom and the Part 15 Coalition, among others, seek an extension of the unrebuttable presumption to all outdoor antennas at any height and any power (within Part 15 limits).[41] Any rule change of this nature -- taken together with the requirement that multilateration systems show that they will not cause "unacceptable interference" -- would make unlicensed devices totally primary to multilateration systems and would suffer from the same procedural defects stated above.[42] Some of the principal beneficiaries of such an expansion are likely to be point-to-point systems such as those operated by Metricom which, ironically, will be the largest source of interference to all users in this band, as noted above. Moreover, as explained several times in the past, licensed (and other) bands exist in which operations such as Metricom's can be conducted, including the new PCS allocation.[43] Further, it would be manifestly unjust for the FCC to allow unlicensed devices that essentially are unwilling to share with licensed users to use the spectrum for free to provide commercial radio services while requiring other service providers to pay for exclusive spectrum (*e.g.*, PCS).

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[41] *See, e.g.*, Petition for Reconsideration of Metricom, Inc. and Southern California Edison Company at 12 ("Metricom").

[42] *See* pages 5-13, *supra.*

[43] Pinpoint Sept. 15, 1994 *Ex Parte* at 18-19; *cf. Report and Order,* Gen. Docket No. 87-389, 4 FCC Rcd 3493 (1989).

Metricom also argues that the unrebuttable presumption of non-interference should be extended to (1) the entire complement of Part 15 devices used by public safety entities and other eligibles under Subparts B and C of Part 90 and (2) portable and mobile Part 15 devices.[44] If the Commission were to expand the presumption beyond the "final link," the presumption would likely swallow the rule, especially given that some point-to-point systems conceivably could be used by Subpart B and C eligibles for all types of communications and also could be shared with other, non-safety related agencies. It would be difficult, if not impossible, to monitor these various uses and determine whether the interference they are causing is from other than emergency communications. For similar reasons, a blanket protection from interference complaints for portable and mobile Part 15 devices could also prove to be an exception that renders the rule nugatory, as most unlicensed devices are or can be made portable or mobile.

### E. There Is No Basis for Increasing the Technical and Operating Restrictions on Multilateration Systems, as Part 15 Proponents Argue

Part 15 proponents also regurgitate their oft-repeated and typically uncompromising claim that there should be no wideband forward links -- *period.*[45] The record, however, clearly indicates that wideband forward links confer substantial cost and efficiency benefits for high capacity multilateration LMS systems, such as ARRAY™, and facilitate the sharing

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[44] Metricom at 10.

[45] *See, e.g.*, Ad Hoc Gas Distribution Utilities at 12-14.

of spectrum by multilateration systems.[46] Pinpoint explained in its Petition how the new rules render the use of such links extremely difficult, particularly at 30 watts ERP and under the obligation to demonstrate that Part 15 devices will suffer no unacceptable interference, which in itself seems to confer sufficient protection on unlicensed operations from any potential interference from such links. Hence, given the acknowledged benefits of wideband forward link technology for LMS, any rule change the FCC makes on reconsideration should facilitate -- rather than negate -- the deployment of the technology as outlined by Pinpoint in its Petition.[47]

It has never been shown, moreover, that wideband forward links cause the significant levels of interference claimed. Indeed, Pinpoint has explained at length why such links and Part 15 devices can be largely compatible.[48] While the record may suffer from a lack of cooperative test results, Part 15 itself was largely responsible for ensuring that the Commission did not adopt rules based on a full record concerning the compatibility of multilateration systems and Part 15 devices. On several occasions, Part 15 interests pulled out of testing scheduled with Pinpoint at the last minute.[49] Thus, Part 15 should not be able to profit from its dilatory and evasive tactics.

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[46] *See* Pinpoint Sept. 15 *Ex Parte* at __; *Ex Parte* Letter from Louis H.M. Jandrell of Pinpoint Communications, Inc. (dated Jan. 25, 1995) at 2-5 ("Pinpoint Jan. 1995 *Ex Parte*"); *Ex Parte* Filing of Pinpoint Communications, Inc. (dated Dec. 7, 1994), Dr. Costas N. Georghiades, "On the Effect of Bandwidth on the Performance of AVM Systems Operating in the 902-928 MHz ISM Band," prepared at the request of Pinpoint Communications, Inc.

[47] *See* Pinpoint at 4-12.

[48] *See, e.g.*, Pinpoint Sept. 15, 1994 *Ex Parte* at 20-22.

[49] *See, e.g., Ex Parte* Letter of David E. Hilliard, Counsel for Pinpoint Communications, Inc. to FCC Chairman Reed E. Hundt (dated Dec. 8, 1994) at 1-3.

Part 15 proponents also ask the FCC to impose strict height limits on multilateration systems, duty cycle limits, and/or to reduce maximum power limits for mobiles and all manner of base stations.[50] Such limits will serve only to increase the costs of multilateration LMS needlessly and to reduce the efficiency and usefulness of LMS systems to the public. In addition, such measures would be particularly detrimental to grandfathered multilateration systems as, currently, they are limited to the sites for which they have been licensed.

Many of the limits proposed betray a complete failure of the Part 15 industry to understand the capabilities multilateration LMS systems must possess to further Intelligent Transportation System objectives. For example, UTC asks that status and instructional messages be limited to one per vehicle per 30 minutes and be limited to 2 seconds maximum.[51] High capacity systems such as Pinpoint will be able to transmit status and instructional messages in a matter of a few tens of milliseconds to a few hundred microseconds and will be required to transmit them in many cases far more frequently than once every thirty minutes. Pinpoint's capacity in a frequency reuse area over a thirty-minute period will be as great as 2.7 *million* vehicle locations and instructional or status messages. By way of comparison, the UTC proposal would theoretically limit a multilateration system to as few as 900 status and instructional messages per 30 minutes, a capacity that would be easily consumed by a single police department in a medium sized city. Of course, a police force, like most fleets, would generally require updates on status and the ability to provide

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[50] *See, e.g.*, UTC at 17.

[51] *Id.* at 10.

instructions more than once every half hour and, in critical circumstances, as frequently as several times a minute.[52]

In sum, Part 15 has advanced no credible basis to further tilt the rules in their favor. To the contrary, Part 15's petitions demonstrate a complete disregard for the Commission's LMS public interest goals that should warn the FCC away from their self-serving proposals and even the rules adopted in the *Order*.

## III. THERE IS CONSENSUS SUPPORT FOR A REVISED MULTILATERATION EMISSION MASK THAT WOULD LIMIT OUT OF BAND INTERFERENCE WITHOUT PRECLUDING LMS SERVICE

Multilateration LMS providers universally sought reform of the *Order's* emission mask because it either would be impossible to meet or likely to cause substantial degradation of existing systems' performance.[53] These petitioners joined Pinpoint in supporting the consensus proposal submitted with the petition of MobileVision.[54] The consensus proposal achieves the Commission's goal of promoting interference-free operations, while taking into account the operating requirements of multilateration LMS systems. Accordingly, the Commission should adopt the consensus proposal.

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[52] Pinpoint would remind the Commission of its efficient design whereby its mobiles' messages are combined with the very same signal that serves the vehicle location function.

[53] MobileVision at 9-10; SBMS at 21-23; Teletrac at 2-8; Uniplex at 6.

[54] MobileVision at Annex 1.

## IV. MULTILATERATION LMS INTERCONNECTION WITH THE PUBLIC SWITCHED NETWORK SHOULD BE LIMITED TO DATA STORE AND FORWARD MESSAGES

A number of petitioners persuasively argue that interconnected communications should be eliminated or severely restricted.[55] Other petitioners believe that there should be no voice communications.[56] Similarly, many argue that store and forward must be defined so as to prevent "effective real-time" communications[57] or that the emergency communications exception to real-time communications will swallow the rule.[58] MobileVision alone, in contrast, argues for unrestricted communications, including voice, and would have the FCC not limit interconnection to "store and forward" for non-emergency services.[59]

Pinpoint agrees with the majority of petitioners that there should be sufficient restrictions on the use of interconnection by multilateration LMS licensees that are consistent with the fact that the 902-928 MHz band is principally for vehicle location and monitoring. Voice communications are inappropriate for several reasons. Voice communications, because of their inherent length, needlessly increase the interference level in a band dedicated first and foremost to vehicle location and monitoring. As indicated above, there are many other spectrum allocations to support mobile voice communications, such as cellular, SMR, and

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[55] *See, e.g.*, Ad Hoc Gas Distribution Utilities at 15-17; CellNet Data at 12; UTC at 9.

[56] *See, e.g.*, Metricom at 13; UTC at 2.

[57] *See, e.g.*, SBMS at 9-10; Ad Hoc Gas Distribution Utilities at 15-17; Metricom at 15.

[58] Metricom at 13-14; *See* SBMS at 20-21.

[59] MobileVision at 2-6.

PCS, that could be combined with LMS system operations. Moreover, there are no apparent efficiencies from implementing voice in the same spectrum as vehicle location or other LMS system. To the contrary, voice communications complicate sharing considerably either in a shared sub-band, as Pinpoint and Uniplex urge the FCC to adopt on reconsideration, or in the circumstances provided for in the rules among grandfathered licensees and between such licensees and MTA auction winners. In light of this fact, Pinpoint stated in its Petition that such communications should be permitted in a given market on a secondary basis to wideband transmissions engaged in vehicle location and monitoring services.[60]

## V. THE GRANDFATHERING RULES SHOULD BE RETAINED AND NARROWLY TAILORED AS PINPOINT ADVOCATED IN ITS PETITION TO BETTER ACHIEVE THE PUBLIC INTEREST GOAL OF PROMOTING THE PROMPT INITIATION OF SERVICE

Contrary to the assertions of SBMS and CellNet Data, the FCC had an adequate basis for grandfathering existing licensees in the *Order*.[61] The Commission has often grandfathered existing authorizations when transitioning to new rules in recognition of the sunk costs into existing system and equipment designs.[62] Here, the Commission's grandfathering provisions present a good chance for a rapid introduction of LMS to the

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[60] Pinpoint at 6 n.6.

[61] SBMS at 13-17; CellNet Data at 13-14.

[62] Notably, in this case, in the absence of grandfathering, the public could face a considerable delay before enjoying the benefits of a competitive LMS market. Indeed, the required competitive bidding rulemaking (as yet not initiated) and subsequent auctions will most likely take well over a year to complete if the complexity and contentiousness of the PCS entrepreneurs' block rulemaking and auctions is any indication. Moreover, grandfathering of existing licensees is appropriate given the great regulatory uncertainty that plagued the multilateration industry before and during the pendency of the rulemaking.